

PSLV-C43 / HysIS

CO-PASSENGER SATELLITES

- Centauri -1
Australia
- Kepler (CASE)
Canada
- FACSAT
Colombia
- Reaktor Hello World
Finland
- InnoSAT-2
Malaysia
- HIBER-1
Netherlands
- 3Cat-1
Spain
- CICERO-8
USA
- Flock 3R
USA
- Global-1
USA
- HSAT-1
USA
- LEMURs
USA



HysIS

Indian Space Research Organisation

THE MISSION

- India's Polar Satellite Launch Vehicle (PSLV-C43) will launch Hyper Spectral Imaging Satellite (HysIS) along with thirty co-passenger satellites from eight countries.

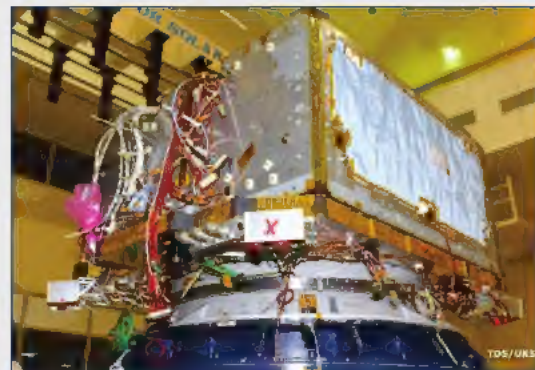
PSLV-C43



- PSLV-C43 is core-alone variant of PSLV
- PSLV-C43 will be launched from First Launch Pad (FLP) of Satish Dhawan Space Centre (SDSC) SHAR, Sriharikota.

HysIS

- Employs Hyper Spectral Imager to take image in Visible and Near Infrared (VNIR) & Short Wave Infrared (SWIR) bands.



Targeted Polar Sun Synchronous Orbit of HysIS:

Height: 636.6 km | Inclination: 97.957 deg

Targeted Polar Sun Synchronous Orbit of Co-Passenger satellites:

Height: 504.5 km | Inclination: 97.468 deg

68th

Launch Vehicle
Mission from
SDSC SHAR

45th

Flight of Polar
Satellite Launch
Vehicle

34th

Launch from
First Launch
Pad

13th

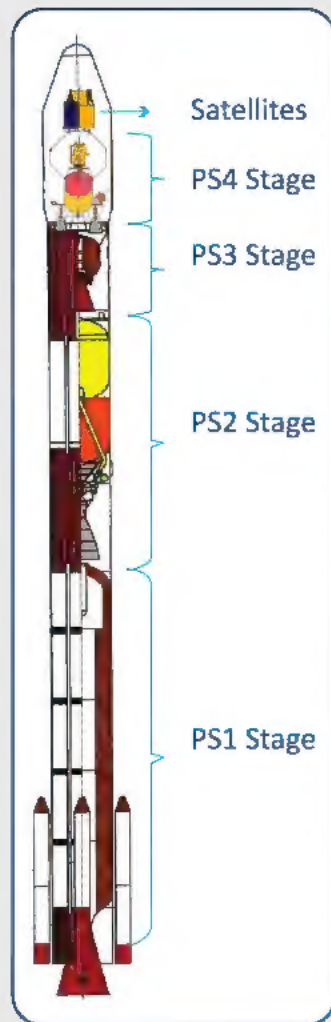
Flight of PSLV
– Core Alone
Variant

6th

Launch of
2018

PSLV-C43 Stages at a Glance

Parameters	Stages			
	Stage 1 (PS1)	Stage 2 (PS2)	Stage 3 (HPS3)	Stage 4 (PS4)
Length (m)	20	12.8	3.6	3.0
Diameter (m)	2.8	2.8	2.0	1.34
Propellant	Solid (HTPB based)	Liquid (UH25 + N2O4)	Solid (HTPB based)	Liquid (MMH + MON3)
Propellant Mass (t)	138.2	42	7.65	2.5



HysIS

HysIS is a Hyper Spectral Imaging Satellite for providing global coverage on repetitive basis to users and supplementing the data from the existing multi spectral sensors. A wide range of applications in agriculture, forestry, geological environments, coastal zones and inland waters, etc., are derived from the satellite.



Salient Features of HysIS

- Satellite Mass : ~380 kg
- Orbit : Polar Sun Synchronous
- Altitude : 636 km
- Inclination : 97.957 deg
- Power : 730 W
- Payload : Two spectrometers in VNIR & SWIR bands
- Mission life : 5 years

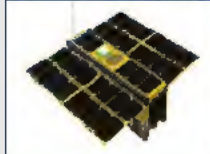


CO-PASSENGER SATELLITES

Total number of co-passenger satellites is 30

Country	Satellites
Australia	1
Canada	1
Colombia	1
Finland	1
Malaysia	1
Netherlands	1
Spain	1
USA	23

Centauri-1 (1 No)



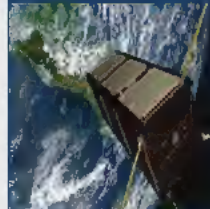
Remote Internet of Things communication services (Australia)

Kepler (CASE) (1 No)



Internet of Things (Canada)

FACSAT (1 No)



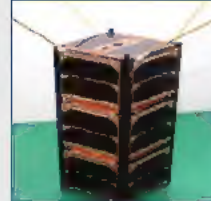
Earth Observation (Colombia)

Reaktor Hello World (1 No)



Earth Observation (Finland)

InnoSAT-2 (1 No)



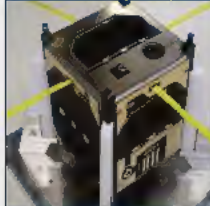
Earth Observation (Malaysia)

HIBER-1 (1 No)



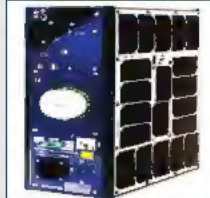
Internet of Things (Netherlands)

3Cat-1 (1 No)



Scientific / Experimental (Spain)

CICERO-8 (1 No)



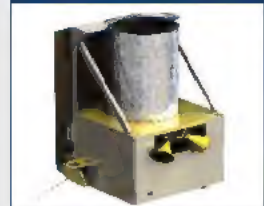
Earth Observation (USA)

Flock 3R (16 Nos)



Earth Observation (USA)

Global-1 (1 No)



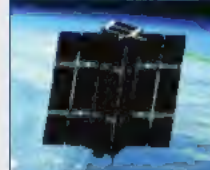
Earth Observation (USA)

HSAT-1 (1 No)



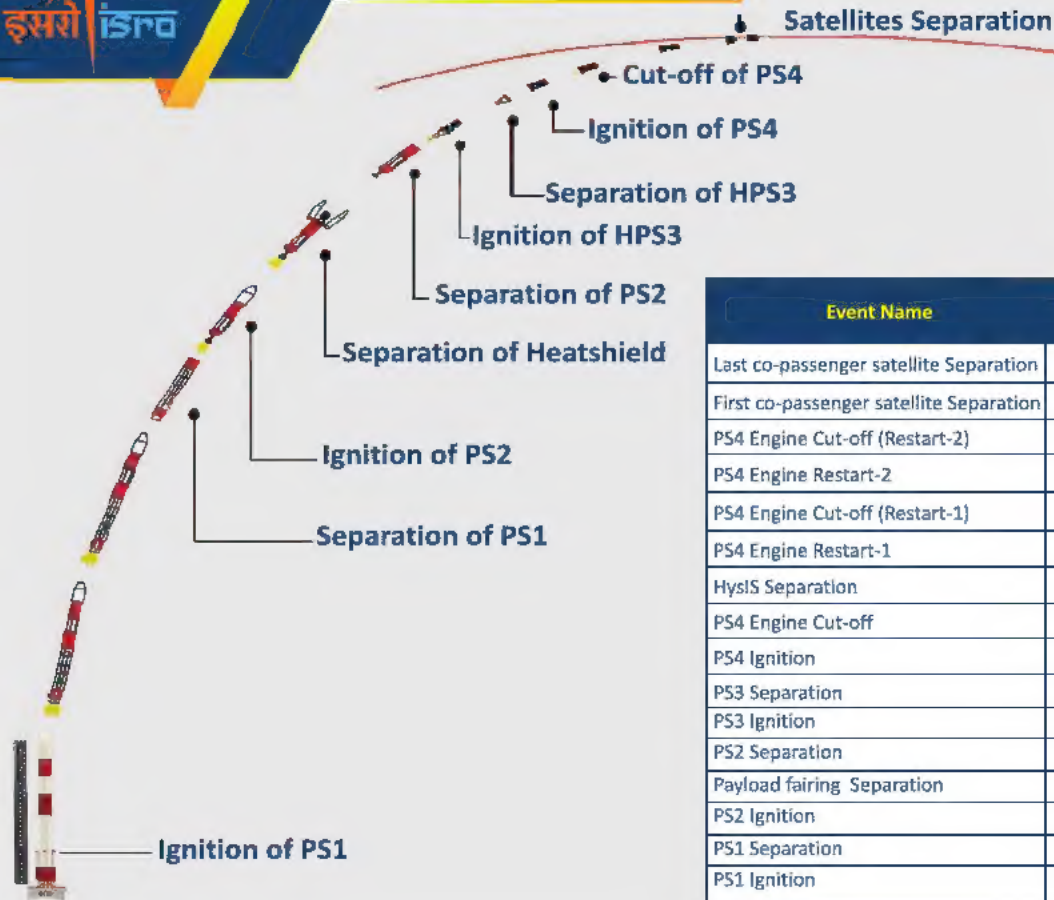
Remote Internet of Things communication services (USA)

LEMURs (4 Nos)



Vessel Automatic Identification System (AIS) (USA)

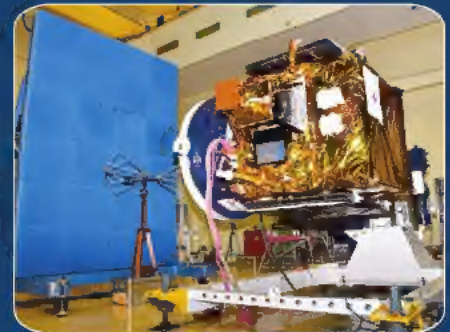
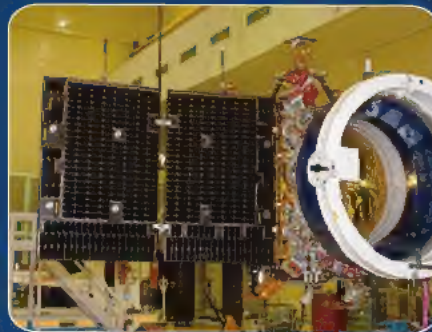
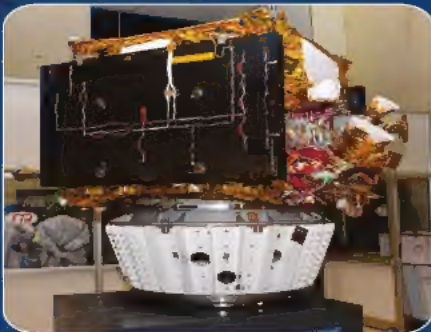
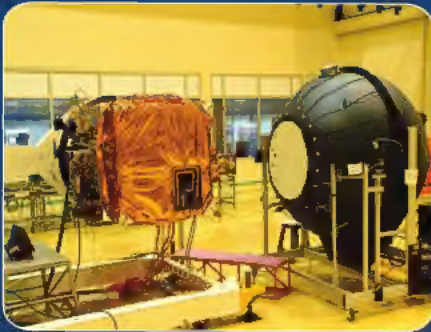
FLIGHT PROFILE



Event Name	Time after lift-off	Altitude (km)	Inertial Velocity (m/s)
Last co-passenger satellite Separation	6767.40	506.554	7609.81
First co-passenger satellite Separation	6541.40	504.196	7610.79
PS4 Engine Cut-off (Restart-2)	6467.40	503.839	7618.07
PS4 Engine Restart-2	6463.02	503.832	7648.07
PS4 Engine Cut-off (Restart-1)	3583.04	642.096	7507.17
PS4 Engine Restart-1	3579.02	642.091	7531.99
HysIS Separation	1041.22	641.457	7537.59
PS4 Engine Cut-off	994.22	640.613	7531.36
PS4 Ignition	499.54	485.477	5420.86
PS3 Separation	489.14	475.808	5435.96
PS3 Ignition	263.40	206.226	3642.39
PS2 Separation	262.20	204.734	3646.17
Payload fairing Separation	180.66	115.613	2228.81
PS2 Ignition	110.06	49.787	1599.03
PS1 Separation	109.86	49.599	1600
PS1 Ignition	0	0.026	451.89

Glimpses of Satellite Preparation

HysIS



Glimpses of Launch Vehicle Preparation

PSLV-C43



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